

# My Health, My World

News and Resources for Teachers and Facilitators

Winter 2001

## Field Test Teacher Opportunities

Field Test teachers are the first to use the draft unit with their students and supply feedback to the writers of the units to be incorporated in the final product.

### NEW SERIES for Teachers Pre-K – 2

*My World & Me*

Unit 2:

(Bio Diversity in Populations and Heredity)

#### Training Workshop

Saturday, April 21, 2001

8:30am - 3:00pm

#### Brainstorming Session

Saturday, May 19 or 26, 2001

8:30am - 11:30am

Join us for these workshops – a fun day of science to excite your students and enjoy potato soup too! For each workshop you attend, you will receive a curriculum guide featuring 10 to 12 fun, easy to do activities, a theme storybook, and an Explorations magazine. You will work in small groups and try out activities for that unit.

## New Unit - JUST RELEASED!

My Health, My World®  
Teacher Workshop

**Unit 4: Food & My World**

For Grades K - 5

(Nutrition & Food Safety)

Saturday, February 24, 2001

8:30am - 3:00pm

(Only a few spaces left for February workshop!)

\*\*\*\*\*  
\*

AND, IF you enjoy sharing science activities with your colleagues... You may become a My Health, My World Certified Facilitator. To become a certified facilitator, attend the teacher training workshop. In addition to the curriculum guide, storybook, and Explorations magazine, you will receive a materials kit to help you hold a teacher training workshop for that unit. This is optional, and not required.

## My Health, My World BOOKMARKS!!!

THE APS My Health, My World websites have moved. The new APS address is:

<http://www.the-aps.org/education/mhmw/myhealth.html>

The Baylor site is: <http://www.myhealthmyworld.org/>

## Activity Sampler

Try these activities from the new units!

### My World and Me

Unit 1: Living Things and Their Needs

Activity 2: What I Need...What I Want

This activity is designed to help students distinguish between actual needs of people and other things that are essential, perhaps, but not essential for life.

You will need:

Large sheet of paper or poster board

scissors

tape

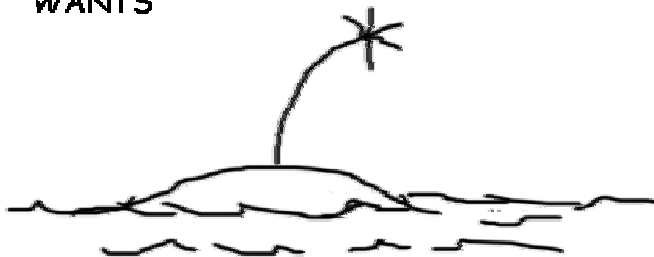
paper, pencils, crayons

magazines, etc.

What to do:

1. Ask students, *What do people need to live?* As students provide answers, call attention to the difference between a need and want or desire. Ask students, *Could a student survive without this* (the item)? Help students understand that the difference between a need and a want is determined by whether the item is necessary for them to stay alive.

**WANTS**



2. Have students draw, paste/tape pictures onto a “WANTS” or “NEEDS” poster. Have them justify their choice of want or need.

### My Health, My World

Unit 4: Food and My World:

Activity 9, Using Food Labels

This activity will increase students’ understanding of the important information contained on food labels pertaining to the nutritional value of a food.

**Background:** All food labels must present the same basic information in a standard format. Information includes, serving size, the amount per serving of saturated fat, cholesterol, dietary fiber, and other nutrients known to be important for health. Labels also provide nutrient reference values, expressed as % Daily Values, to help consumers see how it fits into an overall daily diet. It is important to pay attention to the serving sizes as defined on a food label. In addition, packages must list all ingredients in foods. This list is given in order, by weight, beginning with the ingredient that weighs the most. This information can be helpful when selecting and evaluating foods.

**CARBOHYDRATES** are the body’s main source of fuel. Starchy foods like breads, spaghetti, rice, potatoes, corn, and cereals are made up mostly of carbohydrates. Some carbohydrates called “fiber” or “roughage” are hard to digest. They help move waste through the digestive system. **FATS** include butter, margarine, lard, shortening, and cooking oils. Meats, cheeses, cream, chocolate and many desserts usually are high in fats. Fats are very concentrated sources of energy. Most Americans eat too many saturated fats every day.

**PROTEINS** are important for growth and repair of the body. Protein rich foods include eggs, milk products, meats, beans, poultry, and fish.

**MINERALS** are found in small amounts in foods. They are needed to maintain the body’s many functions.

**VITAMINS** are other chemicals found naturally in foods that are needed in very small amounts by the body.

### Activity

You will need:

For each student:

“From the Label to the Table!” worksheet (enclosed)

“Sugar Measures Up” Lab sheet (enclosed)

For each group:

Approximately 1 cup of white sugar

Measuring cup

Teaspoon

What to do:

1. Ask students, *What are the units of measure mentioned on the Nutritional Facts label?* (cups and grams). Mention that they will be investigating these measures using sugar as an example.
2. Have students, in their groups, following the instructions on the “Sugar Measures Up” page. They will explore how much sugar is in a typical soft drink.
3. Afterwards, ask, *Were you surprised about the amount of sugar in one soft drink? How many soft drinks would you need to meet your daily total carbohydrate requirement? Do you think that that would be a good way to fuel your body?*



## BrainLink

### Unit 5: Brain Chemistry

#### Activity 2: Making Neurons

This activity is designed to introduce students to how messages are sent and received by neurons, and by building a model neuron.

You need:

Copy of “Neurons and Synapses” page (enclosed)  
Playdough, modeling clay, or round Styrofoam balls  
Several pipe cleaners, wire, or yarn  
Masking tape

What to do:

1. Ask students, *When you accidentally touch a hot dish or iron what happens?* Students might mention that they jerk their hand away quickly from the hot item. Ask, *Does your reaction happen slowly or rapidly? Why might that be important?*
2. Briefly outline the basic steps in a simple reflex reaction such as the one described above. *Receptors in the skin detect the presence of something hot. These receptors send a message to the spinal cord. In the spinal cord, a signal is sent immediately to muscles in the arm telling them to move. Another signal is sent up to the brain, alerting it to the situation.* Point out to students that components of the nervous system are able to conduct signals very quickly. Reflex responses (which can be essential for survival) are especially rapid, because the signal does not travel all the way to the brain for processing.
3. Next, ask students as a group to respond to some simple arithmetic questions. Follow by asking, *Did it take a long time for your brain to retrieve the answers? How about to send messages to your lips and tongue to form the words?* Reiterate that components of the brain and nervous system communicate very rapidly.
4. Distribute copies or show an overhead transparency of the “Neurons and Synapses” page. Mention that there are many different kinds of neurons (about 10,000!), but that all of them are designed to carry messages. Help students find the “message-receiving” parts (dendrites and cell bodies) and “message transporting” parts (axons) on the different neurons. Point out the myelin sheath that surrounds the axons of some neurons and helps them conduct signals more rapidly, not unlike the insulation on an electrical wire. Mention that neurons only conduct signals in one direction.
5. Using a variety of materials, challenge students to create their own neurons. Use clay or dough to create cell bodies, and use pipe cleaners, wire, or yarn to create axons and dendrites. Use masking tape for students to create short myelin sheath segments on the axons of their nerve cells.
6. After students have made their neurons, ask them to

identify on their models where incoming messages would be received from other neurons and where their models would be able to transmit message to other neurons. Make sure that students understand that messages flow in only one direction on each neuron.

7. EXTENSION: Have students work together to create networks of interconnected nerve cells that they have constructed on the floor, or on a table or board. Make sure the messages are flowing in the correct direction!

BRAIN JOGGING: Try envisioning the following: If the cell body of a typical motor neuron (a neuron that sends messages to muscles) were the size a tennis ball, its dendrites would extend the length of a normal room and its axon would be about the size of a garden hose nearly 1/2 mile long.

## Web-sites and Unit Resources

### Links

State Curriculum Guide:

<http://www.mcps.k12.md.us/departments/oipd/mspap/reading.html>

NASA Fast Seeds: The NASA Fast Seed Project Information and sees ordering

<http://www.carolina.com/>; <http://www.fastplants.org/>;  
[http://ednet.gsfc.nasa.gov/edcats/partnership/fastplants\\_teach.html.save](http://ednet.gsfc.nasa.gov/edcats/partnership/fastplants_teach.html.save)

WebQuest: an inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the Internet

<http://edweb.sdsu.edu/webquest/webquest.html>

### My World & Me

#### Unit 1: Living Things and Their Needs

### Links

The Discovery Channel, yuckiest site on the Internet  
<http://yucky.kids.discovery.com/>

### Books

Science Fair by William Anton, Newbridge Discovery Links  
Critters, Life Science Aims Activities for Grades K-6, Aims Education Foundation

Nature Close-Up: Earthworms, Elaine Pascoe and Dwight Kuhn, Blackbirch Press, 1996

Earthworms, Kevin J. Holmes, Bridgestone Books, 1998  
Worms (Bug Books), Jill Bailey, Heineman First Library, 1998

Popcorn Science, Newbridge Discovery Links

## My Health, My World

### Unit 2: Water and My World

#### Links

##### Bond and Molecular Polarity:

<http://www2.gasou.edu/chemdept/general/molecule/polar.htm>

##### Mad Science Water Chemistry

<http://www.madsci.org/posts/archives/mar98/889816506.Ch.r.html>

##### Properties of Water Biology Lessons (has a great glossary)

<http://www.biologylessons.sdsu.edu/classes/lab1/index.html>

##### EPA 4kids - a game room, art room, science room

[www.epa.gov](http://www.epa.gov)

##### Association of State drinking Water Conservation in Virginia [www.asdwa.org](http://www.asdwa.org)

### Unit 5: Brain Chemistry

##### Scientific American: Debunking the Digital Brain

<http://www.sciam.com/explorations/020397brain/020397explorations.html>

##### Neuroscience for Kids – A web site created for students and teacher who want to learn more about the nervous system.

<http://faculty.washington.edu/chudler/neurok.html>

##### Society for Neuroscience - resources for digitization of, and access to, late 20th century developments (history) in science and technology.

<http://www.sfn.org/wren/index.html>

#### Books

Intelligence in Animals, The Earth, It's Wonder's and It's Secrets, Reader's Digest, 2000



#### APS Education Office Resources

- ☞ APS Education Office Curricular Materials and Teaching Resources for Grades K - 12 on CD-ROM (1999) 1 Free!
- ☞ Women Life Scientists, Past, Present, and Future \$10 + \$3 S/H
- ☞ The Science of Life Comic Book 1 Free!
- ☞ Questions People Ask About Animals in Research 1 Free!
- ☞ Careers in Physiology Brochure 1 Free!
- ☞ National Science Education Standards
- ☞ Reflecting On Effective Teaching Practices Video 1 Free!
- ☞ Reflecting on Your Teaching (available to download)

[http://www.the-aps.org/education/edu\\_k12.htm#1](http://www.the-aps.org/education/edu_k12.htm#1)

#### Additional Resources

Ones or two of each are available; only one item per teacher.

#### Videos

**Alexandria's Clean-Up Fix-Up Parade**, for Grades K – 2, Theme: Healthy Environment – Healthy Me, sponsored by The Resource Center of the Environmental and Occupational Health Sciences Institute

**Chem TV**, How Chemistry relates to every day life, sponsored by Dow Chemical.

**Common Ground**, Modern mining and you, sponsored by Catepillar.

**Wild About Life!** Instructional program about biodiversity for middle and high school students, sponsored by the U.S. Fish and Wildlife Service.

**Building Blocks of Our World Chlorine**, sponsored by the Chlorine Institute